EDITORIAL

For their help in producing this volume of Mauri Ora I owe a special debt of thanks to Graham Fenwick and Mike Winterbourn, without whom it would not have happened.

My first contact with Mauri Ora was some six years ago. At that time more than a dozen people were actively involved in producing the journal. The 1982 editorial documented the reduction in personnel. This reduction was occasioned by both an increased emphasis on the pursuit of individual goals and a drop in recruitment into PhD. programmes in the Botany and Zoology departments. Causes of this drop in recruitment were many and varied: use of B.Sc.(Hons) as a finishing degree; changes in U.G.C. support for PhD. students; lack of a central committment to research; cyniscism about the worth of biology in the New Zealand community. Of those who did enrol for doctoral degrees many were committed to heavy field research programmes, or else were driven by a wish to finish in as short a time as possible. The concept of a university as a community of scholars seemed lost. Mauri Ora's parent body, Biosoc, died and for a while Mauri Ora was reduced to a one man band. A recent, large increase in PhD enrolments has reversed this trend and the bad spell appears well and truly broken.

These are tremendously exciting times for biology. With the wide application of a few technological breakthoughs molecular biologists and biochemists are leaping towards goals ever more like the dreams of science fiction writers a few years ago. The costs involved, speed of advance and production-line like efficiency of the leaders in these fields indicate that, like the "microchip revolution" and the "space race", the appropriate role for New Zealand science will be that of a well informed, discerning customer. Frustrating though this may be to some it is the only realistic course. Our place in this field, if one exists, will be in the specialist assembly of products on the basis of technologies developed elsewhere. We are disadvantaged by geographical position and lack of resources when it comes to unravelling the mysteries of quasistatic chromosome structure. We will teach about the marvellous advances in molecular biology and reductionist biochemistry. We will not make them.

The dangers involved in setting up specialist small departments or autonomous sections within established departments to deal with new high technology fields should be apparent immediately. Without extensive leave and retraining the specialist knowledge and training of the staff will be obsolete within ten years. If such obsolete staff are given the dignity of classes to teach then a handicap is imposed on the students who lack the information to judge the calibre of their teachers. In established departments such staff could be palmed off into other specialist fields, transferring the handicap; in minidepartments and autonomous groups this is unlikely to happen and there would be nowhere for the staff to go.

In contrast to the direction, vigour, excitement and confidence of molecular biology, whole organism, ecosystem, evolutionary biology is in the doldrums. The brave attempts of the 1960s to quantify ecology and population biology through the collection of enormous data sets and calculation of multiple correlation tables appear to have descended to numerology. The "patterns" found seem to have greater resemblances to Bode's law than to Keppler's, let alone to Newton's law of gravity. Optimal foraging theory is in danger of falling into the same morass as system ecology. The naive adaptationist programme and the more enthusiastic sociobiologists have, correctly, been challenged by those who believe Aunt Jobisca's theorem (everybody knows that... ..) and "just-so-stories" are neither adequate, nor proper supports for the theory of evolution. The theory of evolution is not a catchall to be applied to cover the inadequacies of superficial science. Recent attempts to express evolutionary biology as an axiomatic system, reducing such concepts as "species" to theorems of a new unified structure, seem as unsuccessful as Hilbert's programme to formalise mathematics.

Evolutionary biology, including population biology and ecology, seems in a very similar state to that of classical physics towards the end of the nineteenth century. Massive conceptual changes are needed. They will come.

Lorenz' (1973) cri de coeur to seek out patterns in biology, to cease working and reworking the same limited subset of the (North American and European) fauna appears to have fallen on deaf ears. Biology needs a broader base. So many of the current concepts, which do shape our thoughts and research programmes, have come from European or North American scholars familiar with what are basically similar ecosystems, faunas and floras. The "confirmations" which justify the proselytizing of the concepts are, with few exceptions, based either on the system the originator was familiar with, or on the nearly identical system on the other side of the North Atlantic Ocean. While indubitably there is much good science to be done in Wytham Wood we should not forget that Darwin was contemplating his South American and Galapagos experiences and Wallace was in the East Indies when they formulated the theory of evolution.

New Zealand's place in twenty first century biology, if it wants one, will be firmly in ecology, population biology and other aspects of a reinvigorated, constructivist evolutionary biology. Fascinating opportunities to be at the forefront and make major contributions to the study of the dynamics of evolutionary life are provided by the biological history of this country.

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LORENZ, K.Z. 1973. The fashionable fallacy of dispencing with description. Naturwissenschaften 60:1-9.